



Where ideas connect

Department of Environmental Quality
Division of Air Quality

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DAQE-IN1168006-03

October 9, 2003

Joseph Field
Anadarko Petroleum Corporation
17001 Northchase Drive
P.O. Box 1330
Houston, Texas 77251-1330

Dear Mr. Field:

Re: Intent to Approve: Modification of Approval Order DAQE-666-00, to Replace a Natural Gas Fired Compressor With an Electric Compressor at the Helper Station, Carbon County
CDS SM; ATT; HAPs - Project Code: N1168-006

The attached document is the Intent to Approve (ITA) for the above-referenced project. ITAs are subject to public review. Any comments received shall be considered before an Approval Order is issued.

Future correspondence on this Intent to Approve should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. Please direct any technical questions you may have on this project to Mr. Nando Meli. He may be reached at (801) 536-4052.

Sincerely,

Rusty Ruby, Manager
New Source Review Section

RR:NM:re

cc: Southeastern Utah District Health Department
Mike Owens, EPA Region VIII

STATE OF UTAH

Department of Environmental Quality

Division of Air Quality

**INTENT TO APPROVE: MODIFICATION OF APPROVAL
ORDER DAQE 666-00, FOR EQUIPMENT CHANGES**

**Prepared By: Nando Meli, Engineer
(801) 536-4052
Email: nmeli@utah.gov**

INTENT TO APPROVE NUMBER

DAQE-IN1168006-03

Date: October 9, 2003

**Anadarko Petroleum Corporation
Source Contact
William Grygar
(832) 636-2656**

**Richard W. Sprott
Executive Secretary
Utah Air Quality Board**

Abstract

Anadarko Petroleum Corporation (Anadarko) owns and operates the Helper Station, a natural gas compressor station, east of Price in Carbon County. Anadarko has requested a modification to the Approval Order (AO) DAQE-666-00, to replace a natural gas fired compressor with an electric powered compressor. Anadarko has also requested that the equipment specifications for the compressors be corrected from 1340 hp to 1206 hp. The 1340 hp rating is a manufacturer's rating and they requested that they be derated to 1206 hp for the altitude. Anadarko has also requested that the 5.9 MMBtu/hr amine boiler be changed to 7.33 MMBtu/hr. Carbon County is an attainment area of the National Ambient Air Quality Standards (NAAQS) for all pollutants. New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP) and Maximum Available Control Technology (MACT) regulations do not apply to this source. Title V of the 1990 Clean Air Act does not apply to this source. The emissions, in tons per year, will decrease as follows: NO_x – 36.20, CO – 31.39, VOC – 9.46, HAPs – 2.99. The changes in emissions will result in the following potential to emit totals: PM₁₀ = 0.44, NO_x = 98.99, CO = 93.40, VOC = 27.08 and HAPs = 15.95.

The Notice of Intent (NOI) for the above-referenced project has been evaluated and has been found to be consistent with the requirements of the Utah Administrative Code Rule 307 (UAC R307). Air pollution producing sources and/or their air control facilities may not be constructed, installed, established, or modified prior to the issuance of an Approval Order (AO) by the Executive Secretary of the Utah Air Quality Board.

A 30-day public comment period will be held in accordance with UAC R307-401-4. A notice of intent to approve will be published in the Sun Advocate on October 14, 2003. During the public comment period the proposal and the evaluation of its impact on air quality will be available for both you and the public to review and comment. If anyone so requests a public hearing it will be held in accordance with UAC R307-401-4. The hearing will be held as close as practicable to the location of the source. Any comments received during the public comment period and the hearing will be evaluated.

Please review the proposed AO conditions during this period and make any comments you may have. The proposed conditions of the AO may be changed as a result of the comments received. Unless changed, the AO will be based upon the following conditions:

General Conditions:

1. This Approval Order (AO) applies to the following company:

Site Office

Anadarko Petroleum - Helper
P.O. Box 300
Helper, UT 84526

Corporate Office Location

Anadarko Petroleum Corporation
P.O. Box 1330
17001 North chase Dr.
Houston, TX 77251-1330

Phone Number: (435) 790-4618

(281) 875-1101

Fax Number: (435) 722-3309

(281) 874-3385

The equipment listed in this AO shall be operated at the following location:

PLANT LOCATION:

Exit Highway 6 at Business Loop 55 on the east side of Price, go north to Airport Road, then one-half (½) mile east on Airport Road, then north on main gravel road approximately three miles. The facility is immediately west of the main road.

Universal Transverse Mercator (UTM) Coordinate System:

4,387.5 kilometers Northing, 518.4 kilometers Easting, Zone 12, UTM datum NAD27

2. All definitions, terms, abbreviations, and references used in this AO conform to those used in the Utah Administrative Code (UAC) Rule 307 (R307) and Title 40 of the Code of Federal Regulations (40 CFR). Unless noted otherwise, references cited in these AO conditions refer to those rules.
3. The limits set forth in this AO shall not be exceeded without prior approval in accordance with R307-401.
4. Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved in accordance with R307-401-1.
5. All records referenced in this AO or in applicable NSPS and/or NESHAP and/or MACT standards, which are required to be kept by the owner/operator, shall be made available to the Executive Secretary or Executive Secretary's representative upon request, and the records shall include the two-year period prior to the date of the request. Records shall be kept for the following minimum period of two years.
6. Anadarko Petroleum Company shall install operate the electrically powered, natural gas compressor engine unit and shall conduct its operations of the Helper Compressor Station in accordance with the terms and conditions of this AO, which was written pursuant to Anadarko Petroleum Corporation's Notice of Intent submitted to the Division of Air Quality (DAQ) on July 25, 2003, and additional information submitted to DAQ on September 19, 2003 and October 2, 2003.
7. This AO shall replace the AO (DAQE-666-00) dated November 6, 2000.
8. The approved installations shall consist of the following equipment or equivalent*:
 - A. Four reciprocating internal combustion compressor engines (IC Compressor Engines) each having the specifications given below.

Manufacturer:	Caterpillar
Model:	G3516LE
Fuel:	Natural Gas
Manufacture rated Horsepower:	1,340 derated to 1,206 hp
Stack Height (above ground):	minimum 24 feet (modeling requirements)
 - B. One electrically powered natural gas compressor**

- C. One triethylene glycol dehydration unit with natural gas-fired boiler rated at 1.5×10^6 Btu/hr
- D. One diethylamine (DEA) unit with natural gas-fired boiler rated at 4.40×10^6 Btu/hr
- E. One diethylamine (DEA) unit with natural gas-fired boiler rated at 7.33×10^6 Btu/hr
- F. One emergency vent that is not flared

* Equivalency shall be determined by the Executive Secretary.

**This equipment is listed for informational purposes only and produces no emissions.

9. Anadarko Petroleum Company shall notify the Executive Secretary in writing when the installation of all equipment listed in Condition #8.E has been completed and is operational, as an initial compliance inspection is required. To insure proper credit when notifying the Executive Secretary, send your correspondence to the Executive Secretary, attn: Compliance Section.

If installation has not been completed within eighteen months from the date of this AO, the Executive Secretary shall be notified in writing on the status of the installation. At that time, the Executive Secretary shall require documentation of the continuous installation of the operation and may revoke the AO in accordance with R307-401-11, UAC.

Limitations and Tests Procedures

10. Emissions to the atmosphere at all times from the indicated emission points shall not exceed the following rates and emission factors:

Emission Point: Stack for 1206 hp IC Compressor Engine (Conditions 8.A)

<u>Pollutant</u>	<u>Mass Rate, lb/hr/engine</u>	<u>Emission Factor, g/bhp-hr/engine</u>
NO _x	5.32	2.00
CO	5.05	1.90

11. Stack testing to show compliance with the emission limitations stated in the above condition shall be performed as specified below:

A.	<u>Emissions Point</u>	<u>Pollutant</u>	<u>Testing Status</u>	<u>Test Frequency</u>
	1206 hp compressor	NO _x	*	@
		CO	*	@

B. Testing Status

* Initial compliance testing has already been performed.

@ Test every year using methods 10 and 7E set forth in 40 CFR 60 Appendix A and every 3-months using a portable analyzer. If methods 10 and 7E are used, test results shall be the average of three 30-minute test runs. Volumetric flow rate shall be determined stoichiometrically.

C. Notification

The Executive Secretary shall be notified at least 30 days prior to conducting any required emission testing. A source test protocol shall be submitted to DAQ when the testing notification is submitted to the Executive Secretary. The source test protocol shall be approved by the Executive Secretary prior to performing the tests. The source test protocol shall outline the proposed test methodologies, stack to be tested and procedures to be used. A pretest conference shall be held, if directed by the Executive Secretary.

D. Sample Location

The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, or other methods as approved by the Executive Secretary. An Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) approved access shall be provided to the test location.

E. Volumetric Flow Rate

40 CFR 60, Appendix A, Method 2 or other testing methods approved by the Executive Secretary.

F. Nitrogen Oxides (NO_x)

40 CFR 60, Appendix A, Method 7E or other testing methods approved by the Executive Secretary.

G. Carbon Monoxide (CO)

40 CFR 60, Appendix A, Method 10, or other testing methods approved by the Executive Secretary.

H. Calculations

To determine mass emission rates (lbs/hr), the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate during the test and any necessary conversion factors determined by the Executive Secretary, to give the results in the specified units of the mass emission rate limitation.

To determine the emission factors (g/bhp-hr), the pollutant mass emission rates shall be divided by the brake horsepower during the test and any necessary conversion factors determined by the Executive Secretary, to give the results in the specified units of the emission factor limitation.

I. New Source Operation

For a new source/emission point, the brake horsepower during all compliance testing shall be no less than 90% of the brake horsepower listed in Condition 8 of this AO. If the maximum AO brake horsepower has not been achieved at the time of the test, the following procedure shall be followed:

- 1) Testing shall be at no less than 90% of the brake horsepower achieved to date.
- 2) If the test is passed, the new maximum allowable brake horsepower shall be 110% of the tested achieved rate, but not more than the maximum allowable brake horsepower. This new allowable maximum brake horsepower shall remain in effect until successfully tested at a higher rate.
- 3) The owner/operator shall request a higher brake horsepower when necessary. Testing at no less than 90% of the higher rate shall be conducted. A new maximum brake horsepower (110% of the new rate) will then be allowed if the test is successful. This process may be repeated until the maximum AO brake horsepower is achieved.

J. Existing Source Operation

For an existing source/emission point, the brake horsepower during all compliance testing shall be no less than 90% of the maximum brake horsepower achieved in the previous three years.

K. Internal Combustion (IC) Engines

Portable testing monitors may be used to test IC engines. If portable monitors are to be used, they shall be calibrated according to the manufacturer's recommendations prior to any test. Also, portable monitor's operation and testing time shall be in accordance with manufacturer's recommendations.

12. The natural gas vented to the atmosphere shall not exceed 200×10^6 scf per rolling 12-month period. The natural gas shall not be flared.

To determine compliance with the rolling 12-month total the owner/operator shall calculate a new 12-month total by the twentieth day of each month using data from the previous 12 months. Records of natural gas venting shall be kept for all periods when the plant is in operation. The amount of vented natural gas shall be determined by use of a flowmeter. The records of natural gas venting shall be kept on a monthly basis.

13. Visible emissions from the following emission points shall not exceed the following values:
- A. All emergency vent stacks - 0% opacity
 - B. All natural gas fired compressors – 5% opacity
 - C. All boiler exhaust stacks - 10% opacity

D. All other points - 20% opacity

Opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9.

Fuels

14. The owner/operator shall use only pipeline grade natural gas as a fuel.

Records & Miscellaneous

15. At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this Approval Order including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Executive Secretary which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded.

16. The owner/operator shall comply with R307-107. General Requirements: Unavoidable Breakdowns.

The Executive Secretary shall be notified in writing if the company is sold or changes its name.

Under R307-150-1, the Executive Secretary may require a source to submit an emission inventory for any full or partial year on reasonable notice.

This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including R307.

A copy of the rules, regulations and/or attachments addressed in this AO may be obtained by contacting the Division of Air Quality. The Utah Administrative Code R307 rules used by DAQ, the Notice of Intent (NOI) guide, and other air quality documents and forms may also be obtained on the Internet at the following web site: <http://www.airquality.utah.gov>

The annual emissions estimations below include point source and do not include fugitive emissions, fugitive dust, road dust, tail pipe emissions, and grandfathered emissions. These emissions are for the purpose of determining the applicability of Prevention of Significant Deterioration, non-attainment area, maintenance area, and Title V source requirements of the R307. They are not to be used for determining compliance.

The Potential To Emit (PTE) emissions for this source (the entire plant, or specify what portion) are currently calculated at the following values:

	<u>Pollutant</u>	<u>Tons/yr</u>
A.	PM ₁₀	0.44
B.	NO _x	98.99

C.	CO.....	93.40
D.	VOC.....	27.08
E.	HAPs.....	
	Acetaldehyde	0.34
	Acrolein	0.34
	Benzene	0.56
	Formaldehyde	9.32
	Hexane	0.02
	Toluene.....	1.25
	Xylene	3.67
	Total HAPs.....	15.95

The Division of Air Quality is authorized to charge a fee for reimbursement of the actual costs incurred in the issuance of an AO. An invoice will follow upon issuance of the final Approval Order.

Sincerely,

Rusty Ruby, Manager
New Source Review Section